COLSF
Colbert 7.3 V1

3 August 1989

Memorandum

SUBJECT: Review of Colbert Landfill RD/RA Draft Quality Assurance Project Plan and Field Sampling Plan

TO: Neil Thompson, Project Manager, Superfund Branch

FROM: Michael Schlender, RQAMO

As per your request, the RQAMO has reviewed the Draft Quality Assurance Project Plan and Field Sampling Plan for the Colbert Landfill Site RD/RA, prepared by Landau Associates, Inc.

General Comments

The plan lacks direction in terms of data quality objectives (DQO). For example, (as best as I can assess), the DQO's for this project are presented in Sections 1 and 3. In part, these objectives are for further characterization, the design and implementation of a pilot ground water treatment system, to evaluate the pilot treatment system, and to design and implement a final ground water treatment system. These are not DQO's, and it difficult to assess if the sampling and analysis they are proposing for this project will meet the needs of the final data users. This area needs considerable work. Once the DQO's have been defined, I would expect changes in other portions of the Plan to follow.

The air monitoring is fairly well described in terms of sample collection. However, issues such as where or when samples should be collected to meet the objectives of the project are competely absent. More detailed issues regarding their air sampling program are presented below.

No laboratory has been identified in this plan. This is not a significant issue, however, it would be useful to have a Lab QA Plan to review with this QAPjP and to review the quality assurance protocols used by the receiving lab.

The list of chemical parameters is quite limited in terms of project analytical scope. As I gather, part of the Phase I activities are directed to further characterize the nature and extent of the historical landfill releases. This is especially true for areas outside the Landfill boundaries, west of the Little Spokane River in the deep aquifer. At a minimum, they should provide a full list of Method 8010 parameters throughout this Phase of the work.

The lack of attention toward soil sampling during drilling activities seems like a missed opportunity. They have identified soil sampling throughout the project, but for what? It could be extremely valuable to have some chemical and geological characterization in the direction of the west deep aquifer plume.

Overall I felt the plan needs a good deal of work, especially in the areas of DQO's and data assessment.

Specific Comments

1. **Section 4.1.7 Filling Sample Bottles.** Vial for VOA should not be refilled as stated in text. If bubbles are present, the sampler should replace the bottle and perform the sample collection again.

2. **Section 6.1 Laboratory Instruments.** The opening paragraph describes the lab calibration requirements as "USEPA CLP Program Statements of Work (SOW)". This covers the calibration issues, what requirements are set forth for the lab concerning performance?

3. **Section 7.0, Page 1., Analytical Procedures.** In the second paragraph the text specifies "QC checks and decision criteria" for quality control requirements. The analytical method or CLP procedures and guidelines are identified as this criteria. It should be clear which criteria applies to the assessment of the data produced. If CLP criteria will be used, please identify those sections from the SOW (referenced in Section 6.0). If SW-846 methods will be followed, then clearly state the review or assessment criteria.

4. **Section 7.0, Table QA-7.1.** The table lists the detection limit of Methylene Chloride is listed as "dependant on lab background levels". This detection limit estimation is not acceptable for at least two reasons; one, methylene chloride is a target compound, it was known to be disposed of at the landfill, and two, if the lab has a background problem the lab still does not determine the requirements for the sampling and analysis.

5. **Section 13.0 Corrective Actions.** This section describes what corrective actions may be needed for both field and lab operations. The field corrective action requirements are limited in scope and fail to incorporate any review or oversight role from outside parties in the event of a major field plan revision.

The laboratory corrective actions are confusing. In accordance with the Plan corrective actions will be based on "old" (1986, 1987), SOW's and the plan includes two pages of quality control requirements based on the SOW's listed as corrective action procedures. These are not corrective actions, they are methods which could be used to assess whether corrective actions should be taken. Furthermore, Method 8010 is a gas chromatographic based analysis and is not included in the current SOW's, or even the old SOW's listed in the plan. Therefore, I am confused how the SOW's will be applied to the data and how the data will be assessed, or what corrective actions will be taken.

6. **Section 9.1.6 Lab Matrix Spike Duplicate.** The lab duplicate spike guidelines from the CLP SOW's indicated do not include parameters such as TOX, sulfides, nitrate, and chloride. The SOW's indicated are not designed for Methods 8010.

7. Section 9.1.8 Lab Control Standard. Please identify where LCS will be used in accordance with SOW's and Methods cited.

8. Section 9.1.3 Field Transfer Blank. Which parameters will be associated with this blank?

9. Section 9.1.4 Blind field Duplicate. How will the samples be split, in sequence?, physically?.

10. Section 9.1.5 Lab Matrix Spike. Why not have a duplicate spike for inorganics parameters to assess some degree of precision for the determination of accuracy.

How is a spike for hardness performed?.

11. Section 10, Page 1. Laboratory Audit. A laboratory Audit should occur before the samples are submitted. This would allow the QAO to verify the lab can perform the work and avoid any loss of sensitive samples such as those intended for VOA.

12. Section 7.0 Analytical Procedures. The plan identifies CLP and SOW requirements for the assessment of the data produced. However, the method intended for volatile organics analysis is not consistent with the CLP or the SOW.

The method for air analysis is not an EPA Method. As indicated in Table QA-7.2 on page 3, of Section 7.0, the air method will be NIOSH Method 1003.
No specification is givin to sample sizes or sampling QC.

Except for manganese and Iron, the inorganics parameters indicated for groundwater sampling are included in the CLP SOW's.

Please specify what would be "appropriate" for the anticipated data users concerning data validation. What criteria would allow the analytical procedures used by the laboratory to be modified? It should be noted that any review of deviations of proposed methods shall be in accordance with requirements set forth in EPA 530 SW-87-008 TEST METHOD EQUIVALENCY PETITIONS guidance.

13. Table QA-4.2 Sampling and Handling Records. The Plan identifies the Compendium of Superfund Field Operations Methods, as the source document for Table QA-4.2. The requirements under "Sample Label" records are not in agreement with the Superfund methods, **i.e, the analytical lab shall not complete the sample label information for the samples collected.**

14. Section 4.0, Table QA-4.1. Samples collected for VOA shall be preserved in accordance with Regional policy. For groundwater non-chlorinated sources, HCL is added to the sample to reduce the pH to less than 2.

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Field Sampling Plan Comments

1. Section 3.0, Page 2. Second Paragraph. How will soil samples be scanned for organic vapors? Where will this information be recorded?

Who has defined the "Constituents of Concern"? It is obvious the "expected compounds" found in the Phase I samples will be as listed. However this is only because the lab is not reporting anything else.

The last paragraph on Page FS-3-2 states that "most" chemical analysis will be restricted to the "Constituents of Concern". Which chemical analysis will not be restricted?, and how much is a "limited number" for full Method 8010 constituents.

2. Table FS-3-1. Why is there so much uncertainty in the number of samples to be collected. For example, the ground water characterization will have between 19 and 59 samples, or the monitoring wells will have between 32 and 64 samples. Can the receiving lab schedule around this range of samples?

What about the details of quarterly sampling. Why is this left to one sentence in this table and not described elsewhere? Will there be long term monitoring? Will vinyl chloride be included?

The reference to Method 8010 in the "Analysis" column is misleading. The list proposed for VOA work is much shorter than the full Method 8010 analysis.

It was noted in the QA Summary Table of Air Methods, Table QA-7.2, that three methods of analysis were to used on the air samples collected. Does this mean that more than one sample collection tube is required, or can the lab analyze all the components of Methods 1003, 1022, and 1005 with the same tube extract?

3. Section 4.0, Page 8. Please state exactly how many QC samples will be collected. Please identify the target parameters intended for duplicate samples.

4. Chain-of-Custody Record. A place for the sampler's signature should be added to the Landau Chain-of-Custody Record.

5. Section 4.2.2, Stripping Tower QC Samples. The frequency of the QC samples should be designed to assess the sampling of the intended unit. This section seems to simplify the collection of QC samples as a requirement with no clear rational in mine. In this case, a trip blank and duplicate would be appropriate. Replicates of the duplicate could provide further information on lab precision if long term monitoring is expected.

6. Section 4.3.3 Air QC Samples. Duplicate air samples should be collected from down gradient and upgradient areas. Are the chain-of custody seal instructions appropriate for the air sampling task? How will they assess sample breakthrough?

Neil, please call me at 442-2111 if you require further assistance or need clarification of these comments regarding the QAPjP.